Reclaimed Water Facilities in Grant County

Prepared for the Columbia Basin Sustainable Water Coalition Stakeholder Group

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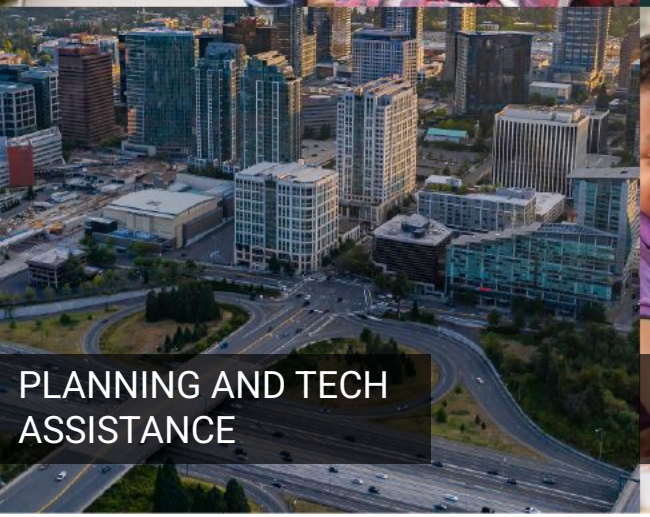
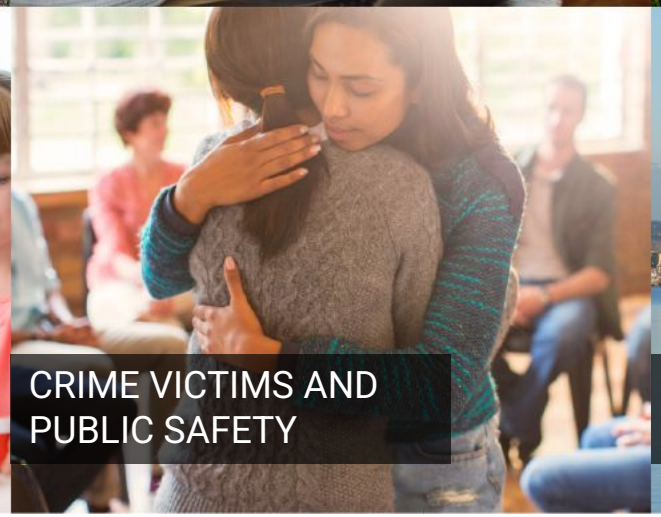
Washington State Department of Commerce

v1.5

We strengthen communities





Agenda

- RCW 90.46
- Reclaimed Water Properties/Requirements
- Grant County Case Studies
- Reclaimed Water Hurdles
- Reclaimed Water Pros and Cons
- E2SSB-6117 – 2007 House Bill Report
- Legislative Requirements of E2SSB-6117
- Foster Decision

RCW 90.46 – Reclaimed Water Use

Enacted in 1992 to provide a new program for treatment and management of wastewater to create a new water supply to replace drinking water for nonpotable purposes.

RCW 90.46

- Encourages use of reclaimed water and directs Departments of Ecology and Health to encourage development of water reclamation facilities
- Directs state to
  - expand direct financial support
  - incentive for capital investments in water reuse and reclaimed water
- Encourages beneficial use to preserve potable water for drinking purposes, instream flow for salmonids, restoration of Puget Sound, provide drought resistance sources of water supply for nonpotable needs, or be a supply source to respond to population growth and global warming

RWF Properties/Requirements

- Reclaimed water is NOT sewage or wastewater by legal definition
- WWTP produces a treated effluent from wastewater and the effluent is released to the environment (water and/or soil) under permit issued by ECY
- RWF produces a new water source derived from highly treated wastewater and has the "right to the water" (as opposed to a "water right") that is created and regulated by permit issued by ECY developed in close collaboration with DOH who acts as the nonlead regulatory agency
- In addition to the processes typically used by WWTPs, RWFs must include a means of filtration or coagulation followed by filtration prior to disinfection process (similar to drinking water)
- Permit conditions for required monitoring, reporting, and water quality limits are generally more rigorous for RWFs.
- Parameters for minimum monitoring for RWFs include the more conservative total coliform and not just a specific subgroup of coliform

Case Studies in Reclaimed Water Use – June 2005

- A report that looked at 15 operating or planned reclaimed water facilities across the state.
- Ecology Publication Number 05-10-013
  - https://apps.ecology.wa.gov/publications/documents/0510013.pdf

City of Ephrata Water Reclamation Facility

Project Highlights

- Project selected as one of four legislative pilot projects in 1998 to demonstrate reclaimed water use within the state.
- High nitrates in local drinking water
- City chose Class A reclaimed water for upgrade
- RW used for aquifer recharge, on-site irrigation, dust control at construction sites

- 1.22 MGD design

- Total project cost: $6.8M
- Funding:
- $5.35M CWSRF Loan
- $1.97M CCWF grant appropriation by the legislature

City of Royal City Water Reclamation Facility

Photos courtesy of Anderson Perry

Project Highlights

- Project selected as one of four legislative pilot projects in 1998 to demonstrate reclaimed water use within the state.
- RW used for aquifer recharge, on-site irrigation
- Project included a force main to transport RW to adjacent sprayfield for irrigation use, but farmer received a cost advantage from using water from the Columbia Basin Irrigation Project so opted not to use the RW.
- .250 MGD design
- Total project cost: $3.7M
- Funding:
- $1.8m USDA RD grant
- $640K USDA loan
- $985k CWSRF Loan
- $750K CDBG grant
- $245,525 SRF loan
- $759,858 city funds

City of Quincy Water Reclamation Facility

Project Highlights

- High nitrates in drinking water led to plant upgrade
- City chose reclaimed water plant for upgrade
- Primary beneficial use is aquifer recharge
- RW plant constructed in 2001
- City already has some purple pipe in place and plans to begin irrigating the city's largest park with reclaimed water after UV and RW pump station upgrades are completed.

- 1.54 MGD design
- Total project cost: $2.7M
- Funding:
- $2.7M USDA RD loan that was later refinanced for a lower interest rate through Ecology's CWSRF program.

City of Warden Water Reclamation Facility

Pictures courtesy of the City of Warden

Project Highlights

- Existing unlined lagoons next to East Low Canal presumed to be leaking wastewater to groundwater
- Threat to groundwater from nitrates and fecal coliform
- RW plant constructed in 2008
- Beneficial uses are groundwater recharge through surface percolation, plant cleaning and on-site irrigation.

- .474 MGD design

- Funding:
- $4.6M CWSRF loan (0% interest)
- $3M CCWF grant
- $3M legislative proviso

Total Potential Available RW for Daily Use

- Ephrata – 1.22 MG
- Royal City - .250 MG
- Quincy – 1.54 MG
- Warden - .474 MG
- Total – 3.49 MG/day (10.71 acre feet)

Reclaimed Water Hurdles

- Why aren't the facilities being used to their maximum benefit?
  - Aquifer Storage and Recovery
    - difficult to identify which water is available to recapture
  - Direct injection for potable reuse
    - approved on a case-by DOH
    - requires a waiver from state board of health under WAC 246-290-060(4)
  - DOH and Ecology barriers
    - Ecology RW total coliform limits are different than drinking water standards
    - sampling and operation/maintenance requirements different

Reclaimed Water Pros & Cons

- Pros
  - potential source of income for owner
  - can be a replacement for potable water

- Cons
  - expensive up-front costs
  - ongoing additional maintenance
  - no dedicated funding in spite of RCW language
  - public perception/education - “no poopy water on my kid’s playground”

E2SSB-6117 – 2007 House Bill Report

- Ecology Publication Number 07-10-098
  - https://apps.ecology.wa.gov/publications/documents/0710098.pdf
- Reaffirmed state's commitment to reclaimed water and recognized the following benefits of reclaimed water use:
  - Consistent, reliable water supply as Washington faces climate change challenges.
  - Reduced discharge of treated wastewater into the Puget Sound and other sensitive areas.
  - More water in our rivers and streams for salmon recovery and other benefits.
  - Comprehensive water planning integrating water and wastewater management.
- Ten reports related to implementation of the state's reclaimed water program were required by legislature which were compiled into a single document for ease of reference by Ecology, DOH, City of Olympia and Dept. of General Administration

Legislative Requirements of E2SSB-6117

- Rule Advisory Committee formed
  - *review the potential barriers or issues related to development of reclaimed water projects pursuant to the evaluation of water rights impairment and report back to legislature by December 31, 2007*

  - Agencies
  - Cities
  - Counties
  - Regional and Private Utilities
  - Water and Wastewater Associations
  - Universities
  - Private Business
  - Industries

- Two subcommittees formed
  - Purpose was to remove barriers to reclaimed water and identify long-term funding for projects

- Legislature provided $4.5M in grants to complete reclaimed water projects in the Puget Sound area.
  - 23 applications received with a combined request of $17.5M
  - Local governments outside of the Puget Sound area expressed serious need for funding assistance
  - Total costs of projects submitted: $100M

Foster Decision

- Foster vs Ecology, City of Yelm and Washington Pollution Control Hearings Board
  - Supreme Court ruled that Ecology exceeded its authority by approving the City of Yelm's water permit under the narrow Overriding Considerations of Public Interest (OCPI) exception
  - reaffirms and reinforces that instream flows adopted in a rule must be protected from impairment.
  - No level of impairment to instream flows are allowed, regardless of magnitude or ecological impact.
  - Out-of-kind mitigation strategies, such as habitat improvements, cannot be used to address impairment of instream flows.
  - “drop for drop” equivalency can be big impact on recovery of recharged RW and mitigation of existing water rights.

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Questions?

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